505999136 04/03/2020

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

EPAS ID: PAT6045846

| SUBMISSION TYPE: | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|-------------------|----------------|
| SULEYMAN CETINTAS | 03/31/2020 |
| XIAN WU | 04/02/2020 |
| JIAN YANG | 04/02/2020 |

RECEIVING PARTY DATA

| Name: | OATH INC. |
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| City: | NEW YORK |
| State/Country: | NEW YORK |
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PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 16839436 |

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Address Line 4: NEW YORK, NEW YORK 10166

| ATTORNEY DOCKET NUMBER: | 085804.124800 |
|-------------------------|---------------|
| NAME OF SUBMITTER: | JUDI CORDO |
| SIGNATURE: | /Judi Cordo/ |
| DATE SIGNED: | 04/03/2020 |

Total Attachments: 4

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PATENT REEL: 052305 FRAME: 0496 505999136

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PATENT REEL: 052305 FRAME: 0497

ASSIGNMENT OF PATENT APPLICATION BY INVENTOR

Whereas I, an undersigned inventor (hereinafter "INVENTOR"), have invented certain new and useful improvements as set forth in the patent application entitled:

NEURAL CONTEXTUAL BANDIT BASED COMPUTATIONAL RECOMMENDATION METHOD AND APPARATUS

| ☑ for which I have executed a U.S. patent application on even date herewith. | |
|---|--|
| ☐ which bears U.S. application serial No, filed | <i>:</i> |
| for which I have executed a patent application in the country ofdate herewith. | on even |
| ☐ which I have executed a U.S. provisional application on even date herewith. | |
| ☐ which is a U.S. provisional application which bears U.S. application serial No, filed | |
| For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, an undersigned inventor, hereby: | |
| (a) Sell, assign and transfer to Oath Inc., a Delaware corporation having a place of at 770 Broadway New York, NY (hereinafter "ASSIGNEE"), (1) the entire right, title interest, and any and all revenues and rights to revenue, for any purpose, associated of commercialization, everywhere in the world, to (A) any and all inventions described Application, (B) said Application, (C) any patent that may be granted thereof, (D) an applications or patents which may claim priority of (or serve as the basis for a priority said Application (including but not limited to continuations, divisions, continuations-substitutes, reissues, reexaminations or extensions thereof, together with all priority of counterpart applications under any existing or future international patent conventions agreements or treaties), and;(2) the right to sue third parties for patent infringement (but not limited to damages) accruing based on activities occurring prior to the execut hereof. | e and with in said y patent y claim by in-part, ights and s, including |
| (b) Authorize and request the Commissioner of Patents to issue any and all Unite Patents resulting from said application or any division, continuation, substitute, renevexamination or reissue thereof to the ASSIGNEE. | |

(c) Agree to execute all papers and documents and, entirely at the ASSIGNEE's expense, and to communicate to the ASSIGNEE any facts known to us respecting the improvements, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing and

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REEL: 052305 FRAME: 0498

Assignment of NEURAL CONTEXTUAL BANDIT BASED COMPUTATIONAL RECOMMENDATION METHOD AND APPARATUS by SULEYMAN CETINTAS, XIAN WU and JIAN YANG to Oath Inc. Docket No. 085804-124800 (VM13200US00)

reissue applications, make all rightful oaths and generally perform any acts which are reasonably necessary in connection with the prosecution of said application, as well as any derivative applications thereof, foreign applications based thereon, and/or the enforcement of patents resulting from such applications.

- (d) Warrant and covenant that no other assignment, license, contract, understanding, interest or other grant to any third party with respect to any of the foregoing has been made, or shall in the future be made, by or on behalf of INVENTOR.
- Covenant not to challenge the validity or enforceability of any of the patent applications (e) or patents assigned to ASSIGNEE hereunder.
- (f) Agree that the terms, covenants and conditions of this assignment shall inure to the benefit of the ASSIGNEE, its successors, assigns and other legal representatives, and shall be binding upon the INVENTOR, as well as the INVENTOR's heirs, legal representatives and assigns.
- Authorize and request my attorney/agent to insert above the application number in order (g) to assist with recordal of this assignment or any other information necessary to perfect this assignment.

| date indicated below. | YMAN CETINTAS have executed this document on the |
|-------------------------------------|--|
| SEALLY | 03/31/2020 |
| Signature of Inventor | Date |
| CUPERTINO, CA | |
| Inventor's City. State of residence | |

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Assignment of Neural Contextual Bandit Based Computational Recommendation Method And Apparatus by Suleyman Cetintas, Xian Wu and Jian Yang to Oath Inc.

Docket No. 085804-124800 (VM13200US00)

| IN TESTIMONY WHEREOF, I XIAN WU indicated below. | have executed this document on the date |
|--|---|
| Xian Wu Signature of Inventor | 04/02/2020 |
| Signature of Inventor | Date |
| SOUTH BEND, IN Inventor's City, State of residence | |

Assignment of Neural Contextual Bandit Based Computational Recommendation Method And Apparatus by Suleyman Cetintas, Xian Wu and Jian Yang to Oath Inc.

Docket No. 085804-124800 (VM13200US00)

| IN TESTIMONY WHEREOF, I <u>JIAN YANG</u> ndicated below. | have executed this document on the date |
|--|---|
| Mane | 4/2/2020 |
| Signature of Inventor | Date |
| PALO ALTO, CA Inventor's City State of residence | |

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REEL: 052305 FRAME: 0501